ATTACHMENT B4		
Section	**Change**	**Explanation of Change**
Attachment B4	Changed EPA hazardous waste "code" to EPA hazardous waste "number."	Modified for consistency with NMAC language.
Attachment B4	Changed "characterization" to "waste analysis" with the exception of Qualification and Training Requirements language in Section B4-3a.	Modified for consistency with NMAC language.
Attachment B4	Provided corrected references throughout due to formatting changes.	Corrected formatting.
Attachment B4	Modified titles, figures and page numbers to reflect modification made in the PMR.	Corrected formatting.
B4-1	Radiography and/or visual examination, headspace gas sampling and analysis, and homogeneous waste sampling and analysis ~~(specified in Permit Attachment B1) are~~ may be used to acquire supplemental ~~sampling and analysis~~ data to meet the waste analysis requirements in ~~of~~ the Waste Analysis Plan (**WAP**) specified in Permit Attachment B.	Clarified supplemental analysis methods that may be used to compile a complete AK record. The justification for this change is provided in Section 1.2.1. of the revised PMR.
B4-1	Acceptable knowledge is used in TRU mixed waste ~~characterization~~ analysis activities in ~~three~~ five ways: ● To delineate TRU mixed waste streams ● To assess if TRU mixed waste streams comply with the Treatment, Storage, and Disposal Facility Waste Acceptance Criteria (**TSDF-WAC**)	Added two additional AK activities for performing waste analysis on TRU mixed waste and compiling a complete AK record. The justification for this change is provided in Section 1.2.1. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.
B4-1	● To assess if TRU mixed ~~heterogeneous debris~~ waste~~s~~ streams exhibit a toxicity characteristic (20.4.1.200 NMAC, incorporating 40 CFR §261~~.24~~ Subpart C) ● To assess if TRU mixed waste~~s~~ streams are listed (20.4.1.200 NMAC, incorporating 40 CFR §261~~.31~~ Subpart D) ● To estimate waste material parameter weights	Added two additional AK activities for performing waste analysis on TRU mixed waste and compiling a complete AK record. The justification for this change is provided in Section 1.2.1. of the revised PMR.

Section	Change	Explanation of Change
B4-1	~~Sampling and analysis shall be performed to confirm acceptable knowledge and to update and modify initial AK assessments. Sampling and analysis includes radiography, visual examination, headspace gas, and homogeneous waste sampling and analysis.~~ TRU mixed waste streams shall undergo applicable provisions of the acceptable knowledge process prior to management, storage, or disposal by the Permittees at WIPP.	Removed requirement that AK be confirmed through radiography, visual examination, HSGSA and SSA. Under the revised PMR, representative HSGSA or SSA is required to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination. The Permittees will examine a representative subpopulation of waste prior to storage or disposal using radiography or VE as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1 and 1.2.2. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response.
B4-2	Traceability of acceptable knowledge information for a selected ~~drum~~ container in the audited Waste Summary Category Group(s) will be examined during the Permittees' audit of a site (Section B4-3f).	Editorial to broaden term to account for all approved container types.
B4-2	The consistent presentation of acceptable knowledge documentation among sites in auditable records will allow ~~Waste Isolation Pilot Plant (WIPP)~~ the Permittees ~~personnel~~ to verify the completeness and adequacy of acceptable knowledge for TRU mixed waste anlaysis during the audit process.	Editorial.
B4-2	The Permittees shall implement the acceptable knowledge process as specified in this Permit to ~~characterize~~ analyze TRU mixed wastes and obtain sufficient waste analysis data to demonstrate compliance with the Hazardous Waste Facility Permit (**HWFP**). The New Mexico Environment Department (**NMED**) may independently validate the implementation of and compliance with applicable provisions of the WAP ~~at each generator/storage site~~ by participation in the Permittees' Audit and Surveillance Program (Permit Attachment B6).	Editorial to clarify Permittees requirements for obtaining sufficient waste analysis data and NMED's ability to validate implementation of the WAP through the audit and surveillance program.
B4-2	Supplemental Acceptable Knowledge Information). If the required information is not available for a particular waste stream, ~~supplemental information~~ it shall be obtained and the waste stream will not be approved by the Permittees until a complete AK record is compiled.~~accepted for management, storage, or disposal at the WIPP facility as a retrievably stored waste (i.e., the waste will be characterized as specified in Permit Attachment B, Section B-3d(1)).~~	Clarified that information is required on a waste stream basis and only approved once a complete AK record is compiled, regardless of whether the waste is retrievably stored or newly generated. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.

Section	Change	Explanation of Change
B4-2b	• Procedures for ~~confirming~~ supplementing acceptable knowledge information through headspace gas sampling and analysis, visual examination and/or radiography, and homogeneous waste sampling and analysis.	Removed confirmation of AK through HSGSA, SSA, VE or radiography. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response.
B4-2b	• ~~Procedures to ensure radiography and visual examination include a list of prohibited items that the operator shall verify are not present in each container of waste (e.g., liquids exceeding TSDF-WAC limits, corrosives, ignitables, reactives, and incompatible wastes)~~ • Procedures to document how changes to Waste Matrix Codes, waste stream assignment, and associated Environmental Protection Agency (**EPA**) hazardous waste numbers based on material composition are documented for any waste	Removed confirmation of AK through HSGSA, SSA, VE or radiography. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response.

Section	Change	Explanation of Change
B4-2b	~~● Procedures for newly generated waste shall describe how acceptable knowledge is confirmed using either the visual examination technique or radiography (or VE in lieu of radiography). Procedures shall also describe the criteria for selecting either radiography or VE to ensure there is documentation and adequate justification of the process selected~~	Removed confirmation of AK through HSGSA, SSA, VE or radiography. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response.
B4-2b	● Procedures for assigning EPA hazardous waste numbers to TRU mixed waste streams ● Procedures for estimating waste material parameter weights	Required that procedures for assigning hazardous waste numbers and material parameters weights be provided to Permittees. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-2c	The generator/storage sites ~~shall~~ may obtain supplemental acceptable knowledge information. The amount and type of supplemental information is site-specific and cannot be mandated, but sites shall collect information as appropriate to support required information.	Allowed that supplemental information be obtained on a need basis. Waste streams with an approved AK Sufficiency Determination may not require additional supplemental information. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-2c	● Analytical data relevant to the waste stream, including results from fingerprint analyses, spot checks, or routine verification sampling. This may also include new information ~~acquired apart from the confirmatory process~~ which supplements required information (e.g., visual examination not performed in compliance with the WAP)	Confirmatory process has been removed from the WAP.
B4-2c	For waste containers that belong to LANL sealed sources waste streams, these containers have a NMED approved AK Sufficiency Determination and do not require headspace gas sampling and analysis prior to shipment to WIPP ~~and meet the criteria of Permit Attachment B, Section B-3a(1)(iii),~~ if the following information is ~~required as~~ part of the AK documentation:	Maintained the determination of AK sufficiency for LANL sealed sources already in the HWFP.

Section	Change	Explanation of Change
B4-2c	• AK Documentation shall also include but shall not be limited to, as available and as necessary to determine the hazardous constituents associated with sealed sources, the following: source manufacturer's sales catalogues, original purchase records, source manufacturer's fabrication documents, source manufacturer's drawings, source manufacturer's fuel capture assembly reports, source manufacturer's operational procedures for cleanliness requirements, source manufacturer's shipping documents, source manufacturer's welding records, transuranic batch material records, and information from national databases (e.g., NMMSS). All of this information may not and need not be available for each source, but sufficient information must be included in the auditable record to derive an adequate understanding of source construction and history to ensure that no VOCs are present in association with the sealed source itself that would render the source hazardous. If AK data indicate that assignment of a hazardous waste number related to organic materials is required in association with a source, this specific source will be assigned to a separate waste stream and that waste stream will be subject to representative headspace gas sampling unless a separate AK Sufficiency Determination is approved by NMED for the waste stream.	Clarified when LANL sealed sources may be subject to future representative HSAGSA sampling and analysis.
B4-3	The Permittees shall require consistency among sites in using acceptable knowledge information to ~~characterize~~ analyze TRU mixed waste by the use of the following ~~three phase process~~: 1) compiling the required and supplemental acceptable knowledge documentation in an auditable record, 2) ~~confirming and updating acceptable knowledge information using radiography and/or visual examination, headspace gas sampling and analysis, and homogeneous waste sampling and analysis~~, ~~and 3)~~ auditing acceptable knowledge records and 3) WSPF approval and waste examination. This section specifies qualification and training requirements, describes each phase of the process and specifies the procedures that the Permittees shall require all sites to develop to implement the requirements for using acceptable knowledge, and specifies data quality requirements for acceptable knowledge.	Removed requirement AK be confirmed through sampling, testing and analysis. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.
B4-3a	• WIPP WAP in Permit Attachment B and the ~~Treatment, Storage and Disposal Facility Waste Acceptance Criteria (~~TSDF-WAC~~)~~ specified in this permit	Editorial.

Section	Change	Explanation of Change
B4-3b	B4-3b Acceptable Knowledge Assembly~~,~~ and Compilation, ~~and Confirmation Procedures~~ and Required Administrative Controls The Permittees shall obtain from sites acceptable knowledge procedures which require consistent application of the acceptable knowledge process and requirements. Site-specific acceptable knowledge procedures shall address the following: ● Sites shall prepare and implement a written procedure to identify hazardous wastes and assign the appropriate hazardous waste ~~codes~~ numbers to each waste stream. The following are minimum baseline requirements/standards that site-specific procedures shall include to ensure comparable and consistent ~~characterization~~ analysis of hazardous waste: - Compile all of the required information in an auditable record. - Review the compiled information and delineate TRU mixed waste streams. Delineation of waste streams must comply with the following definition: a waste stream is defined as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents.	Added additional minimum standards that must be reflected in generator/storage site procedures for delineating waste streams and reviewing the compiled information for compliance with the TSDF-WAC. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-3b	- Review the compiled information to determine if the waste stream is compliant with the TSDF-WAC.	Added additional minimum standard that must be reflected in generator/storage site procedures for reviewing the compiled information for compliance with the TSDF-WAC. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-3b	Review the required information to determine if the waste exhibits a hazardous characteristic or may contain hazardous constituents included in the toxicity characteristics specified in 20.4.1.200 NMAC (incorporating 40 CFR §261), Subpart C.	Editorial to clarify the standard that must be reflected in generator/storage site procedures when assigning characteristic hazardous waste numbers.

Section	Change	Explanation of Change
B4-3b	- Review the compiled information to provide an estimate of material parameter weights for each container to be stored or disposed of WIPP.	Added additional minimum standard that must be reflected in generator/storage site procedures for estimating material parameter weight. Under the revised PMR, material parameters weights will be estimated from AK. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response.
B4-3b	~~● Sites shall develop and implement a written procedure for the confirmation of acceptable knowledge in accordance with Section B4-3(d).~~ ~~● Sites shall prepare and implement a written procedure that provides a cross reference to the applicable waste summary category group (i.e., S3000, S4000, and S5000) to verify all of the required confirmation data has been evaluated and the proper hazardous waste codes have been assigned.~~ ● Sites shall ensure that results of ~~other~~ audits of the TRU mixed waste ~~characterization~~ analysis programs at the site are available in the records.	Removed requirement that generator/storage sites develop and implement AK confirmation procedures. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.A
B4-3d	B4-3d Requirements for ~~Confirmation of~~ Re-evaluating Acceptable Knowledge Information	Clarified the requirements for generator/storage sites when the Permittees identify waste discrepancies as a result of performing the waste examination activities in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.

Section	Change	Explanation of Change
B4-3d	~~Acceptable knowledge includes information regarding the physical form of the waste, the base materials composing the waste, and the process that generates the waste. Waste characterization (i.e., radiography or visual examination, headspace-gas sampling and analysis, and homogeneous waste sampling and analysis) will be used to confirm acceptable knowledge information. Figure B4-2 illustrates the process the Permittees shall require sites to use to confirm acceptable knowledge~~.	Removed the requirement to confirm AK. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.
B4-3d	The Waste Stream Profile Form (**WSPF**) and Waste Analysis Information Summary (including the acceptable knowledge summary) will be reviewed for each waste stream prior to Permittee approval of the WSPF. The Permittees review will assure that the submitted AK information was collected under procedures that assure implementation of the WAP, provides data sufficient to meet the DQOs in Section B-4a(1) and allow the Permittees to demonstrate compliance with the waste analysis requirements of the HWFP. A detailed discussion of the Permittees waste stream review and approval process is provided in Permit Attachment B7.	Clarified and provided reference to the Permittees WSPF process in Permit Attachment B7. The justification for this change is provided in Section 1.2.2. of the revised PMR.
B4-3d	~~Acceptable knowledge characterization results shall be confirmed for both retrievably stored and newly generated waste. All retrievably stored waste shall be characterized using radiography or visual examination to confirm the Waste Matrix Code and waste stream and certify compliance with the WAP (Permit Attachment B). If a site must repackage its retrievably stored waste, either the visual examination technique prior to or during waste packaging or radiography (or VE in lieu of radiography) after waste packaging shall be used to confirm acceptable knowledge information.~~	Removed requirement for confirmation of AK through radiography or visual examination. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.

Section	Change	Explanation of Change
B4-3d	~~For newly-generated wastes, sites that elect to confirm AK during packaging of newly-generated waste shall have written procedures to document the confirmation of acceptable knowledge information with the visual examination technique prior to or during waste packaging. The following minimum requirements shall be addressed in site-specific procedures:~~ ~~● scope (i.e., waste streams) and purpose;~~ ~~● responsible organization(s);~~ ~~● administrative process controls;~~	Removed requirement for confirmation of AK through radiography or visual examination. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.
B4-3d	~~● material inputs to process;~~ ~~● process controls and range of operation that affect final hazardous waste characterization;~~ ~~● rate and quantity of the hazardous waste generated;~~ ~~● list of applicable operating procedures relevant to the hazardous waste characterization;~~ ~~● process knowledge verification sampling (i.e., headspace-gas sampling and/or homogeneous waste annual sampling); and~~ ~~● reporting and records management.~~	Removed requirement for confirmation of AK through radiography or visual examination. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.

Section	Change	Explanation of Change
B4-3d	The Permittees shall require sites to establish procedures for reevaluating acceptable knowledge if the results of waste examination ~~radiography or visual examination results~~ indicate that the waste shipped (or to be shipped) does not match the approved waste stream. ~~the assignment of a different Waste Matrix Code [e.g., Plastic/Rubber (S5310) versus Paper/Cloth (S5330)].~~ Site procedures shall describe how the waste is reassigned, acceptable knowledge reevaluated, and appropriate hazardous waste ~~codes~~ numbers assigned. If ~~a~~ the reevaluation requires that the ~~waste must be assigned to a different~~ Waste Matrix Code be changed for the waste stream or the waste does not match the approved waste stream ~~based on radiography or visual examination~~, the following minimum steps shall be taken to reevaluate acceptable knowledge:	Clarified the requirement to establish procedures for re-evaluating AK when the Permittees identify waste discrepancies as a result of performing the waste examination activities in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-3d	• If discrepancies exist in the acceptable knowledge information for the revised ~~reassigned~~ Waste Matrix Code, document the segregation of ~~this container~~ the affected portion of the waste stream, and define the actions necessary to fully ~~characterize~~ analyze the waste	Clarified the requirement to establish procedures for re-evaluating AK when the Permittees identify waste discrepancies as a result of performing waste examination activities in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-3d	In lieu of ~~confirmatory~~ sampling and analytical or other data to the contrary (including headspace gas and total/TCLP analysis of solids/soils), sites shall assign the toxicity characteristic hazardous waste ~~codes~~ numbers based on the presence of the constituent identified by acceptable knowledge, regardless of the quantity or concentration. ~~Radiography or visual examination shall be used to confirm the Waste Matrix Code and waste stream identified using acceptable knowledge. If the waste stream designation is so detailed that the specific components cannot be differentiated by radiography (e.g., a waste stream based on a specific type of plastic), this waste stream confirmation need not be performed and this omission shall be explained in the auditable record.~~	Removed requirement for AK be confirmed through radiography or VE. The revised PMR requires compilation of a complete AK record, including representative HSGSA or SSA to resolve assignment of EPA HWNs for waste streams without an AK Sufficiency Determination approved by NMED or for which the Permittees have not requested approval of an AK Sufficiency Determination and 100 percent examination through radiography or VE when the AK does not clearly substantiate the absence of prohibited items. The Permittees will examine a representative subpopulation of waste prior to storage as described in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR and Appendix I of the Section 311 NOD Comment/Response Matrix.

Section	Change	Explanation of Change
B4-3d	Procedures shall describe how ~~discrepancies in the Waste Matrix Code are recorded and~~ additions to hazardous waste ~~codes~~ numbers based on material composition are documented, as necessary (Section B4-3b). ~~With the exception of qualifying LANL sealed sources waste containers, headspace-gas sampling and analysis shall be conducted on all TRU mixed waste or randomly selected containers from waste streams that meet the conditions for reduced headspace gas sampling listed in Permit Attachment B, Section B-3a(1), to be sent to the WIPP facility. The LANL sealed sources waste containers that meet specified conditions must be assigned VOC concentration values in accordance with Section B-3a(1)(iii). Headspace-gas data will be used to confirm the presence or absence of volatile organic compounds (VOCs) identified using acceptable knowledge.~~	Clarified the requirement to establish procedures for re-evaluating AK when the Permittees identify waste discrepancies as a result of performing waste examination activities in Permit Attachment B7. Removed requirement for confirmation of AK through HSGSA. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR.
B4-3d	The Permittees shall require sites to use acceptable knowledge to identify spent solvents associated with each TRU mixed waste stream or waste stream lot. Headspace-gas data will ~~then~~ be used to ~~confirm~~ resolve the assignment EPA F-listed hazardous waste numbers to debris waste streams when waste streams do not have an AK Sufficiency Determination approved by NMED or for which the Permittees do not request approval of an AK Sufficiency Determination, ~~acceptable knowledge concerning the presence or absence of F-listed solvents and concentration of applicable toxicity characteristic solvents~~. In this case, ~~S~~ sites shall ~~confirm the~~ assign ~~ment of~~ F-listed hazardous waste ~~codes~~ numbers (20.4.1.200 NMAC, incorporating 40 CFR §261.31) by evaluating the average concentrations of each VOC detected in container headspace gas for each waste stream or waste stream lot using the upper 90 percent confidence limit (**UCL_{90}**).	Clarified the requirement for re-evaluating AK when the Permittees identify waste discrepancies as a result of performing waste examination activities in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.

Section	Change	Explanation of Change
B4-3d	EPA ~~H~~ hazardous waste numbers associated with S3000 and S4000 waste streams will be ~~verified~~ assigned based on the results of the total/TCLP analysis of a representative homogeneous waste sample when waste streams do not have an AK Sufficiency Determination approved by NMED or for which the Permittees do not request an AK Sufficiency Determination. ~~If discrepancies between the results obtained from homogeneous waste sampling and analysis and headspace-gas sampling and analysis exist (i.e., a VOC is detected in the solidified waste but not in the headspace), the most conservative results will be used to verify acceptable knowledge and assign hazardous waste codes, as applicable.~~ As with headspace gas, if the total/TCLP results indicate that the concentration of a characteristic waste or non-toxic constituent of an F003 waste is below regulatory levels, the hazardous waste ~~codes~~ numbers assigned initially by acceptable knowledge may be changed ~~as part of the confirmatory process~~. Otherwise, if an F-listed waste constituent is detected, the appropriate hazardous waste ~~code~~ number shall be applied. If the ~~confirmatory process~~ site determines that the source of the F-listed constituent is a spent solvent used in the process or is determined to be the result of mixing a listed waste with a solid waste during waste packaging, or applicable toxicity characteristic or non-toxic F003 wastes are present in excess of regulatory levels, then the site will either: 1) assign the applicable listed hazardous waste ~~code~~ number to the entire waste stream, or 2) segregate the drums containing detectable concentrations of the solvent into a separate waste stream and assign applicable hazardous waste ~~codes~~ numbers. Each site shall document, justify, and consistently delineate waste streams and assign hazardous waste ~~codes~~ numbers based on site-specific permit requirements and other state-enforced agreements. To determine the mean concentration of solvent VOCs, all headspace-gas data ~~and~~ or homogeneous waste data for a waste stream or waste stream lot (i.e., the portion of the waste stream that is ~~characterized~~ analyzed as a unit) will be used, including data qualified with a 'J' flag (i.e., less than the PRQL but greater than the method detection limit [**MDL**]) or qualified with a 'U' flag (i.e., undetected). For data qualified with a 'U' flag, sites shall use one-half the MDL in calculating the mean concentration. Because listed wastes are not defined based on concentration, sites may not remove hazardous waste ~~codes~~ numbers assigned using acceptable knowledge if hazardous	Clarified the requirement for re-evaluating AK when the Permittees identify waste discrepancies as a result of performing waste examination activities in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.

Section	Change	Explanation of Change
B4-3d	TRU mixed headspace gases and homogeneous waste matrices may contain one or two constituents (e.g., carbon tetrachloride and 1,1,1-trichloroethane) at concentrations that are orders of magnitude higher than the other target analytes. In these cases, samples shall be diluted to remain within the instrument calibration range for the elevated constituents. Sample dilution results in elevated MDLs for the constituents with elevated concentrations. Only the concentrations of detected constituents will be used to calculate the mean for the purpose of assigning F-listed hazardous waste ~~codes~~ numbers. Because the presence or absence of F-listed solvents cannot be ~~confirmed~~ assigned based on the artificially high MDLs that are caused by sample dilution, data flagged as 'U' and showing an elevated MDL will not be used in calculating the mean concentration.	Clarified the requirement for re-evaluating AK when the Permittees identify waste discrepancies as a result of performing waste examination activities in Permit Attachment B7. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-3e	The data quality objectives for sampling and analysis techniques are provided in Permit Attachment B3. Analytical results will be used to ~~confirm the~~ supplement ~~characterization~~ analysis of wastes based on acceptable knowledge. To ensure that the acceptable knowledge process is consistently applied, the Permittees shall require sites to comply with the ~~following~~ data quality requirements for acceptable knowledge in Permit Attachment B3. ~~documentation:~~	Clarified that results from sampling and analysis are used to provide supplemental analysis, not ~~confirm~~ verify AK. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR.
B4-3e	~~● Precision - Precision is the agreement among a set of replicate measurements without assumption of the knowledge of a true value. The qualitative determinations, such as compiling and assessing acceptable knowledge documentation, do not lend themselves to statistical evaluations of precision. Therefore, precision requirements are not established for acceptable knowledge.~~	Editorial. These DQOs for AK have been moved to Attachment B3.

Section	Change	Explanation of Change
B4-3e	~~• Accuracy - Accuracy is the degree of agreement between an observed sample result and the true value. The percentage of waste containers which require reassignment to a new Waste Matrix Code and/or designation of different hazardous waste codes based on the reevaluation of acceptable knowledge or on obtaining sampling and analysis data will be reported as a measure of acceptable knowledge accuracy.~~ ~~• Completeness - Completeness is an assessment of the number of waste streams or number of samples collected to the number of samples determined to be useable through the data validation process. The acceptable knowledge record shall contain 100 percent of the information specified in Section B4-2. The useability of the acceptable knowledge information will be assessed for completeness during audits.~~	Editorial. These DQOs for AK have been moved to Attachment B3.
B4-3e	~~Comparability - Data are considered comparable when one set of data can be compared to another set of data. Comparability is ensured through sites meeting the training requirements and complying with the minimum standards outlined for procedures that are used to implement the acceptable knowledge process. All sites shall assign hazardous waste codes in accordance with Section B4.3b and provide this information regarding its waste to other sites who store or generate a similar waste stream.~~	Editorial. These DQOs for AK have been moved to Attachment B3.
B4-3e	~~Representativeness - Representativeness expresses the degree to which sample data accurately and precisely represent characteristics of a population. Representativeness is a qualitative parameter that will be satisfied by ensuring that the process of obtaining, evaluating, and documenting acceptable knowledge information is performed in accordance with the minimum standards established in Section B4-3b. Sites also shall assess and document the limitations of the acceptable knowledge information used to assign hazardous waste codes (e.g., purpose and scope of information, date of publication, type and extent to which waste parameters are addressed and limitations of information in identifying hazardous wastes).~~	Editorial. These DQOs for AK have been moved to Attachment B3.

Section	Change	Explanation of Change
B4-3e	Each site shall address quality control by tracking its performance with regard to the use of acceptable knowledge by: 1) assessing the frequency of inconsistencies among information, and 2) documenting the results of ~~acceptable knowledge confirmation through~~ waste discrepancies identified by the Permittees during waste examination using radiography, ~~or~~ visual examination, or review of VE records, ~~headspace-gas analyses, and homogeneous waste analyses.~~ In addition, the acceptable knowledge process and waste stream documentation shall be evaluated through internal assessments by generator/storage site quality assurance organizations ~~and assessments by auditors or observers external to the organization (i.e., DOE/Carlsbad Field Office (CBFO), NMED, EPA)~~.	Clarified that in lieu of using AK ~~confirmation~~ verification data, sites shall also use the results of Permittee waste examination for tracking quality. The justification for this change is provided in Sections 1.2.1. and 1.2.2. of the revised PMR.
B4-3f	A procedure exists for resolving waste discrepancies in acceptable knowledge documentation in accordance with Section B4-3; ~~A procedure exists for confirming acceptable knowledge information through: a) radiography or visual examination, b) headspace gas sampling and analysis, and c) homogeneous waste sampling and analysis in accordance with Section B4-3; and~~	Removed requirement that generator/storage sites maintain AK confirmation procedures subject to audit because confirmation is not required. The justification for this change is provided in Sections 1.2.1., 1.2.2. and 1.3. of the revised PMR.
B4-3f	Auditors will verify and document that sites use administrative controls and follow written procedures to ~~characterize~~ analyze hazardous waste for newly-generated and retrievably stored wastes. ~~Auditors will review procedures used by the sites to confirm acceptable knowledge information using radiography or visual examination, headspace gas sampling and analysis, and homogeneous waste sampling and analysis~~	Removed requirement that auditors review AK confirmation procedures because AK confirmation is not required. The justification for this change is provided in Sections 1.2.1., 1.2.2., 1.2.3, and 1.3. of the revised PMR.

Section	Change	Explanation of Change
B4-4	~~B4-4 Additional Final Confirmation of Acceptable Knowledge at the WIPP Facility~~	Permit Attachment B7 describes the Permittees' process for approving and accepting TRU mixed waste at WIPP. Information from this section has been editorially revised and moved to Permit Attachment B7. The justification for this change is provided in Sections 1.2.2. of the revised PMR.
B4-4	~~The Permittees shall require confirmation of acceptable knowledge characterization designations at the site, as stated in Section B4-3(b). In addition and prior to notifying a site that a waste stream can be managed, stored, or disposed at the WIPP facility, the Permittees will review the Waste Stream Profile Forms, the WIPP Waste Information System (WWIS), and associated Characterization Information Summary to ensure that radiography or visual examination, headspace-gas sampling and analysis data, and homogeneous waste sampling and analysis data confirm hazardous waste characterization made using acceptable knowledge. The Permittees shall require all sites to provide all of the required data associated with waste stream characterization, including summary acceptable knowledge information, radiography or visual examination, headspace gas sampling and analysis, and homogeneous waste sampling and analysis results.~~	Permit Attachment B7 describes the Permittees' process for approving and accepting TRU mixed waste at WIPP. Information from this section has been editorially revised and moved to Permit Attachment B7. The justification for this change is provided in Sections 1.2.2. of the revised PMR.

Section	Change	Explanation of Change
B4-4	~~In addition, sites will designate the assigned hazardous waste codes for the waste stream on the waste profile form. The WWIS and associated Characterization Information Summary will be evaluated as illustrated in Figure B4-2 and compared to the hazardous waste codes specified on the waste stream profile form. The Permittees will review information provided by the sites to ensure that additions to hazardous waste codes are identified and justified based on data and that hazardous waste codes are included in the Part A of the WIPP permit application. As part of the reconciliation of data quality objectives (DQOs) (Permit Attachment B3, Section B3-11), sites are required to track and report changes to hazardous waste characterizations. If data consistently indicates that discrepancies with acceptable knowledge information were identified at the site level (and were subsequently reconciled), the Permittees will require sites to reassess the materials and processes that generate the waste, and resubmit waste stream profile information and implement their corrective action system.~~	Permit Attachment B7 describes the Permittees' process for approving and accepting TRU mixed waste at WIPP. Information from this section has been editorially revised and moved to Permit Attachment B7. The justification for this change is provided in Sections 1.2.2. of the revised PMR.
B4-4	~~If the Permittees' review of a waste stream profile form and associated waste characterization data reveal nonconformance with acceptable knowledge requirements as described in Permit Attachment B3 (i.e. project level nonconformance), the Permittees shall not manage, store, or dispose of the waste stream until corrective action is taken as specified in Permit Attachment B3. Repeated nonconformances by a site in implementing and documenting WAP requirements (Permit Attachment B) will result in the termination of management, storage, or disposal of the site's waste, waste stream(s), or summary category group(s), as applicable. Management, storage, or disposal of the subject waste summary category at WIPP will not resume until the Permittees find that all corrective actions have been implemented and the site complies with all applicable requirements of the WAP.~~	Permit Attachment B7 describes the Permittees' process for approving and accepting TRU mixed waste at WIPP. Information from this section has been editorially revised and moved to Permit Attachment B7. The justification for this change is provided in Sections 1.2.2. of the revised PMR.

Section	Change	Explanation of Change
B4-4	~~Any drum with unresolved discrepancies associated with hazardous waste characterization will not be managed, stored, or disposed at the WIPP facility until the discrepancies are resolved. The Permittees shall require the sites to reassess the materials and processes that generate the waste, and headspace-gas sampling and analysis, radiography or visual examination, and homogeneous waste sampling and analysis results. All shipments of the subject waste stream will cease until the corrective action(s), as necessary, have been implemented and the discrepancy resolved. The Permittees will notify NMED when the certification status of a waste stream at a site is revoked. Waste characterization and certification authority will not be reinstated until the site demonstrates all corrective actions have been implemented and the program is reassessed by the Permittees.~~	Permit Attachment B7 describes the Permittees' process for approving and accepting TRU mixed waste at WIPP. Information from this section has been editorially revised and moved to Permit Attachment B7. The justification for this change is provided in Sections 1.2.2. of the revised PMR.
Figure B4-1	A revised figure B4-1 has been inserted into the PMR	To be consistent with permit text.
Figure B4-2	Deleted figure ~~Confirmation of Acceptable Knowledge~~	No longer relevant. New Figure B7-3 Waste Examination Process, Figure B7-4 Waste Examination at WIPP and Figure B7-5 Waste Examination at an Off-Site Facility have been provided in Attachment B7.
Figure B4-3	Figure B4-3 is renumbered to Figure B4-2 and updated.	To be consistent with permit text.